

RATIONALE

ESTABLISH AS1946 PART SPECIFICATIONS FOR FLARED FITTINGS.

AS643

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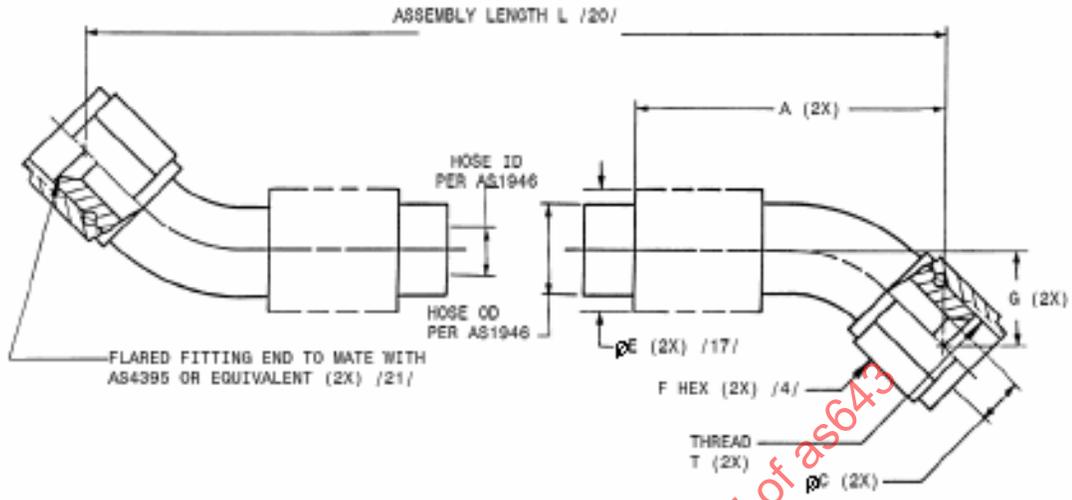


FIGURE 1 - HOSE ASSEMBLY

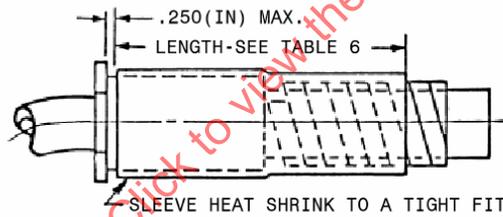


FIGURE 2 - ABRASION SLEEVE ATTACHMENT /7/ /8/

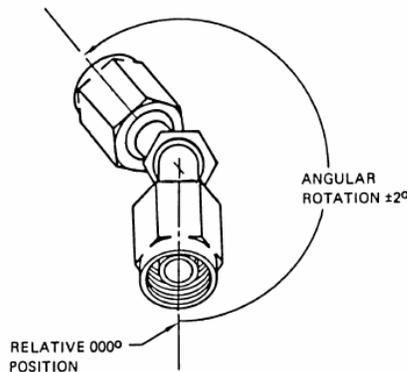
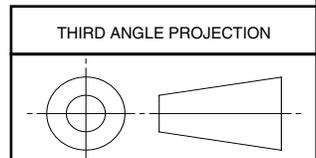


FIGURE 3 - FITTING ANGULAR ORIENTATION /26/



CUSTODIAN: SAE G-3/G-3D

PROCUREMENT SPECIFICATION: /15/ AS1946

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AEROSPACE STANDARD
HOSE ASSEMBLY, POLYTETRAFLUOROETHYLENE,
METAL BRAID, MEDIUM PRESSURE, FLARED,
45° TO 45°

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SHEET 1 OF 8

TABLE 1 - DIMENSIONS

HOSE ASSEMBLY NO. & SIZE	HOSE SIZE (REF)	FITTING TYPE	FITTING MATL	THREAD T PER AS8879 (REF)	HOSE ID		C MIN BALL DIA	E MAX WITHOUT SLEEVING	F HEX (REF)	G MIN	G MAX
					A	MIN					
/24/		/25/	/5/			MAX	/16/	/17/			
AS643D (-03)	.188	-	-	-	-	-	-	-	-	-	-
AS643D (-03)	.188	S	CRES	.3750-24UNJF-3B	.110	1.63	.068	.49	.500	.263	.388
			AL	.3750-24UNJF-3B	.110	1.63	.068	.49	.500	.263	.388
			TI	.3750-24UNJF-3B	.110	1.63	.068	.49	.500	.263	.388
AS643D (-03)	.188	E	CRES	.4375-20UNJF-3B	.110	1.92	.068	.49	.562	.302	.427
			AL	.4375-20UNJF-3B	.110	1.92	.068	.49	.562	.302	.427
			TI	.4375-20UNJF-3B	.110	1.92	.068	.49	.562	.302	.427
AS643E (-04)	.250	R	CRES	.3750-24UNJF-3B	.173	1.92	.068	.55	.500	.302	.427
			AL	.3750-24UNJF-3B	.173	1.92	.068	.55	.500	.302	.427
			TI	.3750-24UNJF-3B	.173	1.92	.068	.55	.500	.302	.427
AS643E (-04)	.250	S	CRES	.4375-20UNJF-3B	.173	1.92	.112	.55	.562	.302	.427
			AL	.4375-20UNJF-3B	.173	1.92	.112	.55	.562	.302	.427
			TI	.4375-20UNJF-3B	.173	1.92	.112	.55	.562	.302	.427
AS643E (-04)	.250	E	CRES	.5000-20UNJF-3B	.173	1.94	.112	.55	.625	.314	.445
			AL	.5000-20UNJF-3B	.173	1.94	.112	.55	.625	.314	.445
			TI	.5000-20UNJF-3B	.173	1.94	.112	.55	.625	.314	.445
AS643F (-05)	.313	R	CRES	.4375-20UNJF-3B	.235	1.94	.112	.63	.562	.314	.445
			AL	.4375-20UNJF-3B	.235	1.94	.112	.63	.562	.314	.445
			TI	.4375-20UNJF-3B	.235	1.94	.112	.63	.562	.314	.445
AS643F (-05)	.313	S	CRES	.5000-20UNJF-3B	.235	1.94	.164	.63	.625	.314	.445
			AL	.5000-20UNJF-3B	.235	1.94	.164	.63	.625	.314	.445
			TI	.5000-20UNJF-3B	.235	1.94	.164	.63	.625	.314	.445
AS643F (-05)	.313	E	CRES	.5625-18UNJF-3B	.235	2.11	.164	.63	.688	.369	.494
			AL	.5625-18UNJF-3B	.235	2.11	.164	.63	.688	.369	.494
			TI	.5625-18UNJF-3B	.235	2.11	.164	.63	.688	.369	.494
AS643G (-06)	.375	R	CRES	.5000-20UNJF-3B	.298	2.11	.164	.70	.625	.369	.494
			AL	.5000-20UNJF-3B	.298	2.11	.164	.70	.625	.369	.494
			TI	.5000-20UNJF-3B	.298	2.11	.164	.70	.625	.369	.494
AS643G (-06)	.375	S	CRES	.5625-18UNJF-3B	.298	2.11	.218	.70	.688	.369	.494
			AL	.5625-18UNJF-3B	.298	2.11	.218	.70	.688	.369	.494
			TI	.5625-18UNJF-3B	.298	2.11	.218	.70	.688	.369	.494
AS643G (-06)	.375	E	CRES	.7500-16UNJF-3B	.298	2.36	.218	.70	.875	.445	.632
			AL	.7500-16UNJF-3B	.298	2.36	.218	.70	.875	.445	.632
			TI	.7500-16UNJF-3B	.298	2.36	.218	.70	.875	.445	.632
AS643H (-08)	.500	R	CRES	.5625-18UNJF-3B	.391	2.36	.218	.83	.688	.445	.632
			AL	.5625-18UNJF-3B	.391	2.36	.218	.83	.688	.445	.632
			TI	.5625-18UNJF-3B	.391	2.36	.218	.83	.688	.445	.632
AS643H (-08)	.500	S	CRES	.7500-16UNJF-3B	.391	2.36	.289	.83	.875	.445	.632
			AL	.7500-16UNJF-3B	.391	2.36	.289	.83	.875	.445	.632
			TI	.7500-16UNJF-3B	.391	2.36	.289	.83	.875	.445	.632
AS643H (-08)	.500	E	CRES	.8750-14UNJF-3B	.391	2.73	.289	.83	1.000	.501	.688
			AL	.8750-14UNJF-3B	.391	2.73	.289	.83	1.000	.501	.688
			TI	.8750-14UNJF-3B	.391	2.73	.289	.83	1.000	.501	.688

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HOSE ASSEMBLY NO. & SIZE /24/	HOSE SIZE (REF)	FITTING TYPE /25/	FITTING MATL /5/	THREAD T PER AS8879 (REF)	HOSE ID MIN (REF)	A MAX	C MIN BALL DIA /16/	E MAX WITHOUT SLEEVING /17/	F HEX (REF)	G MIN	G MAX
AS643J (-10)	.625	R	CRES	.7500-16UNJF-3B	.485	2.73	.289	.97	.875	.501	.688
			AL	.7500-16UNJF-3B	.485	2.73	.289	.97	.875	.501	.688
			TI	.7500-16UNJF-3B	.485	2.73	.289	.97	.875	.501	.688
AS643J (-10)	.625	S	CRES	.8750-14UNJF-3B	.485	2.73	.366	.97	1.000	.501	.688
			AL	.8750-14UNJF-3B	.485	2.73	.366	.97	1.000	.501	.688
			TI	.8750-14UNJF-3B	.485	2.73	.366	.97	1.000	.501	.688
AS643J (-10)	.625	E	CRES	1.0625-12UNJ-3B	.485	3.15	.366	.97	1.250	.588	.775
			AL	1.0625-12UNJ-3B	.485	3.15	.366	.97	1.250	.588	.775
			TI	1.0625-12UNJ-3B	.485	3.15	.366	.97	1.250	.588	.775
AS643K (-12)	.750	R	CRES	.8750-14UNJF-3B	.615	3.15	.366	1.17	1.000	.588	.775
			AL	.8750-14UNJF-3B	.615	3.15	.366	1.17	1.000	.588	.775
			TI	.8750-14UNJF-3B	.615	3.15	.366	1.17	1.000	.588	.775
AS643K (-12)	.750	S	CRES	1.0625-12UNJ-3B	.615	3.15	.466	1.17	1.250	.588	.775
			AL	1.0625-12UNJ-3B	.615	3.15	.466	1.17	1.250	.588	.775
			TI	1.0625-12UNJ-3B	.615	3.15	.466	1.17	1.250	.588	.775
AS643K (-12)	.750	E	CRES	1.3125-12UNJ-3B	.615	3.44	.466	1.17	1.500	.609	.857
			AL	1.3125-12UNJ-3B	.615	3.44	.466	1.17	1.500	.609	.857
			TI	1.3125-12UNJ-3B	.615	3.44	.466	1.17	1.500	.609	.857
AS643M (-16)	1.000	R	CRES	1.0625-12UNJ-3B	.851	3.44	.466	1.52	1.250	.609	.857
			AL	1.0625-12UNJ-3B	.851	3.44	.466	1.52	1.250	.609	.857
			TI	1.0625-12UNJ-3B	.851	3.44	.466	1.52	1.250	.609	.857
AS643M (-16)	1.000	S	CRES	1.3125-12UNJ-3B	.851	3.44	.661	1.52	1.500	.609	.857
			AL	1.3125-12UNJ-3B	.851	3.44	.661	1.52	1.500	.609	.857
			TI	1.3125-12UNJ-3B	.851	3.44	.661	1.52	1.500	.609	.857
AS643M (-16)	1.000	E	CRES	1.6250-12UNJ-3B	.851	3.97	.661	1.52	1.812	.697	1.017
			AL	1.6250-12UNJ-3B	.851	3.97	.661	1.52	1.812	.697	1.017
			TI	1.6250-12UNJ-3B	.851	3.97	.661	1.52	1.812	.697	1.017
AS643N (-20)	1.250	R	CRES	1.3125-12UNJ-3B	1.101	3.97	.661	2.00	1.500	.697	1.017
			AL	1.3125-12UNJ-3B	1.101	3.97	.661	2.00	1.500	.697	1.017
			TI	1.3125-12UNJ-3B	1.101	3.97	.661	2.00	1.500	.697	1.017
AS643N (-20)	1.250	S	CRES	1.6250-12UNJ-3B	1.101	3.97	.850	2.00	1.812	.697	1.017
			AL	1.6250-12UNJ-3B	1.101	3.97	.850	2.00	1.812	.697	1.017
			TI	1.6250-12UNJ-3B	1.101	3.97	.850	2.00	1.812	.697	1.017
AS643N (-20)	1.250	E	CRES	1.8750-12UNJ-3B	1.101	4.34	.850	2.00	2.125	.785	1.127
			AL	1.8750-12UNJ-3B	1.101	4.34	.850	2.00	2.125	.785	1.127
			TI	1.8750-12UNJ-3B	1.101	4.34	.850	2.00	2.125	.785	1.127
AS643P (-24)	1.500	R	CRES	1.6250-12UNJ-3B	1.344	4.34	.850	2.28	1.812	.785	1.127
			AL	1.6250-12UNJ-3B	1.344	4.34	.850	2.28	1.812	.785	1.127
			TI	1.6250-12UNJ-3B	1.344	4.34	.850	2.28	1.812	.785	1.127
AS643P (-24)	1.500	S	CRES	1.8750-12UNJ-3B	1.344	4.34	1.063	2.28	2.125	.785	1.127
			AL	1.8750-12UNJ-3B	1.344	4.34	1.063	2.28	2.125	.785	1.127
			TI	1.8750-12UNJ-3B	1.344	4.34	1.063	2.28	2.125	.785	1.127
AS643P (-24)	1.500	-	-	-	-	-	-	-	-	-	

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HOSE ASSEMBLY, POLYTETRAFLUOROETHYLENE,
METAL BRAID, MEDIUM PRESSURE, FLARED,
45° TO 45°

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TABLE 2 - TOLERANCES

HOSE ASSEMBLY LENGTH	TOLERANCE
UNDER 18 IN	±.125
18 TO 36 IN EXCLUSIVE	±.250
36 TO 50 IN EXCLUSIVE	±.500
50 IN AND OVER	±1%

TABLE 3 - HOSE AND SLEEVE CODES

HOSE OR SLEEVE CODE	SLEEVE MATERIAL	TEMP. LIMIT °F
-	(-) INDICATES HOSE ONLY, NO SLEEVE (AS1946)	450
A	ABRASION SLEEVE TUBULAR (PTFE - AS1291 - CODE B) /7/	450
B	ABRASION SLEEVE COIL (NYLON AS1294) /8/	275
C	FIRE SLEEVE (AS1072 SIL-FG) (15 MIN) /9/ /10/ /14/	450
E	ABRASION SLEEVE SHRINK-ON (FEP) /12/	350
F	ABRASION SLEEVE SHRINK-ON (POLYOLEFIN AS1073 - CODE B) /12/	275
G	FIRE SLEEVE (AS1072 SIL-FG) (5 MIN) /9/ /10/ /13/	450
H	FIRE SLEEVE INTEGRAL SILICONE (AS1723) (15 MIN) /14/	450
J	FIRE SLEEVE INTEGRAL SILICONE (5 MIN) /13/	450
K	INTEGRAL ABRASION SLEEVE (BRAIDED) POLYESTER /11/	300
L	ABRASION SLEEVE COIL (PTFE - AS1293) /8/	450

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TABLE 4 - HOSE AND SLEEVE OUTSIDE DIAMETERS

HOSE OR SLEEVE CODE	TOLERANCE	HOSE SIZE /6/ .188	HOSE SIZE /6/ .250	HOSE SIZE /6/ .313	HOSE SIZE /6/ .375	HOSE SIZE /6/ .500	HOSE SIZE /6/ .625	HOSE SIZE /6/ .750	HOSE SIZE /6/ 1.000	HOSE SIZE /6/ 1.250	HOSE SIZE /6/ 1.500
-	MAX	.285	.347	.417	.500	.614	.799	.906	1.140	1.390	1.707
	MIN	.234	.304	.367	.430	.546	.641	.766	1.078	1.328	1.637
A	MAX	.390	.473	.524	.620	.715	.818	.955	1.295	1.550	1.841
	MIN	.320	.393	.454	.515	.645	.748	.870	1.210	1.450	1.771
B	MAX	.339	.409	.472	.535	.669	.767	.896	1.224	1.474	1.807
	MIN	.260	.330	.393	.456	.590	.681	.810	1.122	1.372	1.681
C	MAX	.692	.692	.780	.840	.970	1.090	1.220	1.590	1.900	2.190
	MIN	.487	.533	.598	.658	.778	.891	1.016	1.288	1.578	1.887
E	MAX	.301	.375	.438	.507	.635	.749	.887	1.288	1.460	1.777
	MIN	.248	.320	.383	.452	.578	.679	.811	1.146	1.358	1.667
F	MAX	.341	.411	.474	.547	.663	.769	.904	1.244	1.482	1.823
	MIN	.278	.348	.411	.484	.600	.699	.834	1.158	1.396	1.729
G	MAX	.692	.692	.780	.840	.970	1.090	1.220	1.590	1.900	2.190
	MIN	.487	.533	.598	.658	.778	.891	1.016	1.288	1.578	1.887
H	MAX	.641	.641	.704	.766	.891	1.016	1.141	1.454	1.704	2.016
	MIN	.537	.594	.657	.719	.844	.949	1.074	1.394	1.649	1.957
J	MAX	.641	.641	.704	.766	.891	1.016	1.141	1.454	1.704	2.016
	MIN	.450	.550	.595	.670	.775	.875	.995	1.310	1.508	1.815
K	MAX	.378	.430	.499	.559	.665	.772	.887	1.210	1.460	1.782
	MIN	.320	.390	.450	.510	.625	.726	.841	1.148	1.398	1.712
L	MAX	.375	.445	.508	.571	.687	.789	.914	1.242	1.492	1.809
	MIN	.267	.333	.407	.470	.586	.681	.828	1.138	1.388	1.697

TABLE 5 - HOSE WEIGHT MAX. ALL OTHERS REF

HOSE OR SLEEVE CODE OR FITTING	FITTING TYPE /25/ UNITS		HOSE	HOSE	HOSE							
			SIZE .188	SIZE .250	SIZE .313	SIZE .375	SIZE .500	SIZE .625	SIZE .750	SIZE 1.000	SIZE 1.250	SIZE 1.500
-	LB/IN		.005	.007	.008	.010	.012	.016	.020	.045	.058	.074
A	LB/IN		.003	.004	.004	.006	.007	.008	.010	.014	.020	.045
B	LB/IN		.001	.001	.002	.002	.003	.004	.004	.005	.006	.009
C	LB/IN		.009	.009	.011	.012	.017	.018	.028	.030	.040	.047
E	LB/IN		.001	.002	.002	.002	.003	.004	.006	.007	.007	.008
F	LB/IN		.002	.002	.002	.002	.003	.003	.005	.006	.006	.007
G	LB/IN		.009	.009	.011	.012	.017	.018	.028	.030	.040	.047
H	LB/IN		.016	.018	.020	.023	.030	.037	.045	.085	.107	.132
J	LB/IN		.016	.017	.018	.021	.027	.035	.042	.079	.100	.123
K	LB/IN		.006	.008	.009	.011	.015	.018	.023	.050	.063	.081
L	LB/IN		.003	.004	.004	.005	.008	.009	.011	.018	.022	.028
FIRESLEEVE CLAMP	LB/EA		.015	.016	.018	.019	.021	.023	.025	.029	.033	.037
FITTING END												
A/D - CRES	R, S, E	LB/EA	.040	.055	.075	.085	.155	.235	.330	.535	.995	1.370
B/E - AL	R, S, E	LB/EA	---	.019	.026	.029	.053	.080	.112	.182	.338	.466
C/F - TI	R, S, E	LB/EA	.024	.033	.045	.051	.093	.141	.198	.321	.597	.822

TABLE 6 - SLEEVE LENGTH

HOSE SIZE	LENGTH
.188, .250, .313, .375	2.00 ± .25
.500, .625	2.50 ± .25
.750, 1.000	3.00 ± .25
1.250, 1.500	4.00 ± .25

NOTES:

1. CONSTRUCTION AND PERFORMANCE: AS1946, FITTINGS SHALL BE PERMANENTLY ATTACHED TO THE HOSE.
2. OPERATING CHARACTERISTICS: SEE AS1946.
3. MATERIALS:
 - a. HOSE AND FITTINGS - PER AS1946 /5/
 - b. SLEEVES - SEE APPLICABLE STANDARDS, TABLE 3
- /4/ STANDARD COUPLING NUTS SHALL BE IN ACCORDANCE WITH AN818, AS1790, OR AS4370 (AS1791 WIRE AS APPLICABLE) AND MATE WITH AS4395 OR AS5309 FITTING ENDS. NONSTANDARD COUPLING NUTS MAY BE USED, PROVIDED THEY ARE FUNCTIONALLY EQUIVALENT, AND PROVIDED THEY CANNOT BE REMOVED FROM THE FITTING. NUTS SHALL MEET THE TORQUE TEST REQUIREMENTS PER AS1946.